

WHAT IS CLAIMED IS:

1. A vehicle body motion realization method in which a direction in which tire generating force acts is calculated for each wheel by means of a performance function including the direction in which tire generating force acts, so as to realize desired yaw moment and vehicle body generating force for obtaining a predetermined vehicle body motion, and the vehicle body motion is realized by using the calculated direction in which the tire generating force acts,

wherein said performance function is a performance function corresponding to a ratio between a sum of respective squares of the desired vehicle body generating force and yaw moment, and a utilization factor of a road surface frictional coefficient that is a frictional coefficient between a road surface, which is supposed to have a constant condition for each of wheels, and a tire.

2. The vehicle body motion realization method according to claim 1, wherein the direction in which the tire generating force acts is calculated for each of wheels by means of the performance function in which the desired yaw moment and vehicle body generating force are defined as restriction conditions.

3. The vehicle body motion realization method according to claim 2, wherein the direction in which the tire generating force acts is calculated for each wheel by carrying out linearization of the restriction conditions of the desired yaw moment and vehicle body generating force and also using said performance function.

4. The vehicle body motion realization method according to claim 3, wherein said wheels are four in number with two front wheels and two rear wheels, and

wherein the direction in which the tire generating force acts is calculated for each wheel by means of a pseudo-inverse matrix of two rows and four columns, which is prepared from the two restriction conditions of said linearized desired yaw moment and vehicle body generating force and the performance function.

5. A vehicle body motion realization apparatus comprising:

calculating means that calculates a direction in which tire generating force acts for each wheel based on detecting means for detecting state amounts of a vehicle, and a performance function including a direction in which tire generating force acts, so as to realize desired yaw moment and vehicle body generating force for obtaining a predetermined vehicle body motion; and

control means that controls a steering angle of each wheel and braking and driving forces of each wheel based on the direction in which the tire generating force acts, which direction is calculated by said calculating means for each wheel, a value of the performance function used in calculation of the direction in which the tire generating force acts, and a utilization factor of a road surface frictional coefficient, which is, a frictional coefficient between a road surface and a tire, which utilization factor is calculated based on the desired yaw moment and vehicle body generating force.